

NOTICE OF PROPOSED AMENDMENT 05/2016

DEFENCE AVIATION SAFETY REGULATIONS FOR FLIGHT TEST

INTRODUCTION

Applicability

1. This proposal is applicable to all members of the Defence aviation community conducting flight test activities. This Notice of Proposed Amendment (NPA) is issued by the Director General Technical Airworthiness (DGTA) and the Director Airworthiness Coordination and Policy Agency (DACPA), for and on behalf on the Defence Aviation Safety Authority (DASA). The term NPA is used by both the European Aviation Safety Authority (EASA) and the European Military Airworthiness Requirements (EMAR) and replaces the previous NPRM.

Purpose

2. This NPA substantially revises the previous draft DASR 21 and DASR FT in the area of Military Permits to Fly (MPTF – DASR 21 Subpart P) and Flight Test Permits under the draft DASR FT. The content of this NPA have been pre-coordinated with senior flight test stakeholders in the Defence and is therefore published as authoritative regulation on 30 Sep 16. The purpose of this NPA is to seek wider feedback ahead of planned stakeholder workshops in late Oct 16, with the intent of publishing improved Acceptable Means of Compliance (AMC) and Guidance Material (GM) with the formal release of DASR in Jan 17.

Background

3. This NPA results from the need to implement a solution for flight test that:

- a. meets the Defence Aviation Authority's requirements for the conduct of such activities;
- b. aligns the conduct of flight test and similar activities as far as possible with EMAR and EASA Part 21;
- c. maximises the inbuilt provision of DASR 21 Subpart P concerning MPTF; and
- d. provides sufficient flexibility in the approval of such arrangements so that the intent of current Flight Test Approval Authority (FTAA) provisions is preserved.

4. **EASA Part 21.** In June 2015, EASA introduced substantial changes to its Part 21 regulation to bolster regulation for flight test activities. In particular, four specific categories of flight test introduced by this change were adopted by Defence in recent changes to OAREG 4. These regulation changes are expected to flow to EMAR Part 21 in due course.

5. Noting that flight test encompasses a broad range of activities, reference to these categories is merely a means of describing those types of activities that are subject to safety regulation, rather than restricting the definition of flight test itself. Further, under the amended EASA Part 21, the four categories determine the levels of competence and experience of people approving and conducting flight test activities. In contrast, OAREG4 required FTAA's to promulgate OIP documenting competence and experience requirements for flight test. DASR FT (as proposed in this NPA) preserves this arrangement, and instead uses the four categories to determine the approval level for the MPTF, as well as mandating the use of the MPTF for flight test within the scope of the four categories (refer below).

6. **Harmonisation.** In seeking to determine the best application of flight test regulation under DASR, a number of European Military Airworthiness Authorities were approached for information in terms of approval of the MPTF. Those consulted indicated that most MPTFs were approved directly by the Authority, however in some cases (generally related to lower risk flight test activities), organisations holding an appropriate approval were privileged to approve MPTFs for production, trial modifications and minor modifications. In reviewing these responses, the Authority has determined

that Category 1 and 2 MPTF will be approved by the Authority or a Delegate of the Safety Authority (DoSA), while Category 3 or 4 MPTF will be approved by an approved organisation holding an appropriate privilege. EMAR 21 has built-in provision for Military Production Organisation Approval (MPOA) and Military Design Organisation Approval (MDOA) holders to be granted additional privileges to approve certain types of MPTF, that aligns well with the definition of Category 3 and 4 flight test activities respectively.

7. **Approval of category 1-4 flight test.** In principle, a category 1-4 flight test may only be conducted:

- a. following the approval of flight conditions (DASR 21.A.710) and issue of an MPTF (DASR 21.A.711), and
- b. by a MAO that has been awarded an appropriate privilege¹ to conduct the flight test activity.

8. **Extant flight test permit processes.** Extant *processes* concerning the issue of flight test permits are both suitable and appropriate to support both the planning of a flight test activity and the approval of flight conditions leading to the issue of an MPTF.

9. **Approval of other types of flight test.** Flight test outside of category 1-4 includes activities, such as maintenance test flights, customer/contractual acceptance test flights (post the issue of a statement of conformity – refer category 3), customer familiarisation testing, and non-substantial changes to flight operation (with no corresponding change to the aircraft type design). These activities require neither an MPTF to be issued nor do they require a specific privilege to be awarded to the MAO; they are not regulated under DASR. The aviation commander retains the obligation to ensure that risks introduced through flight test are eliminated or minimised so far as reasonably practicable. Aviation commanders may also impose common flight test processes for the purposes of consistency and standardisation. AAC 002/2016 *Aviation Command Responsibilities under DASR* is applicable to flight test.

NPA 05/2016 Content

10. This NPA encompasses the following features (note that references below to approval of an MFTP include the approval of flight conditions under DASR 21.A.710):

- a. Transfer of the four categories of flight test as introduced previously by OAREG 4 and DASR FT to DASR 21, hence aligning with EASA regulation.
- b. Category 1 and 2 MPTFs to be approved by the Authority or a DoSA, to closely align with the current arrangements for the FTAAAs. A senior engineer or operator within AMAFTU and AWC will receive a delegation from the Authority for this purpose, and hence is considered a DoSA for flight test. Similarly, AMAFTU and AWC MAOs will receive a privilege to conduct these categories of flight test.
- c. Category 3 and 4 MPTFs to be approved by MDOA and MPOAs as an additional privilege. This involves removal of Australian specific language in GM to DASR 21 Subparts G and J indicating that the privilege of MPTF approval will be seldom granted. MPOA and MDOA holders seeking such a privilege should ensure that they have both appropriate procedures in place and suitably experienced personnel. DoSAs for flight test will assist the Authority's assessment of MPOA/MDOA holders prior to award of the privilege.
- d. In the event that there is not a suitably privileged MDOA/MPOA to approve a category 3 or 4 MPTF (as applicable), or the organisation is unwilling to exercise its privilege, a DoSA for flight test may also approve an MPTF for these categories.

¹ Privileges are only awarded by the Authority. For the purpose of flight test this role will be exercised by the DoSA for flight test, hence preserving the intent of the previous FTAA arrangement.

- e. Flight test DoSAs will be solely responsible for assessing and approving MAOs for the privilege to approve the conduct of category 1 to 4 flight test activities.
- f. Unless command authority limitations are imposed, other types of flight test activity outside of category 1 to 4 may be conducted by a MAO without any specific privilege or approval from the Authority; noting that statutory WH&S obligations remain for all risks to be eliminated or minimised so far as reasonably practicable during flight test activities.

11. Specific detail of the changes is contained in annex A and can be viewed using the following link to the provisional DASR electronic manual from 30 Sep 16:

<http://www.defence.gov.au/DASP/Docs/Manuals/8000-011/DASRWeb/index.htm>

Implementation of regulatory amendments for flight test

12. Due to the imminent withdrawal of MILAVREG and OAREG (and hence regulations underpinning previous flight test arrangements), it was necessary to include the new arrangements in DASR with effect 30 Sep 16. This NPA provides an opportunity for the regulated community to provide feedback on the solution implemented on 30 Sep 16, for potential further amendment if necessary.

How to submit comments on this NPA

13. Responses to this NPA are to be recorded on the NPA Response Sheet included at annex B, and as published on the DASP Internet website.

14. Responses are to be submitted by email to DGTA-ADF.DASR-NPA@defence.gov.au. Hardcopies of the NPA Response Sheet are not required. Air Command units are requested to forward their responses to HQAC A9 DDA via their FEG chain of command.

Timing

15. Comments to this NPA are to be received by close of business **28 October 2016**.

Disposition of comments received

16. A Summary of Responses will be prepared and published on the DASP Internet website <http://www.defence.gov.au/dasp/>. The DASA will not individually acknowledge or respond to comments or submissions.

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Annexes:

- A. DASR flight test regulation proposal
- B. NPA 05/2016 – Comment Sheet

DASR Flight Test regulation proposal

Note the changes described below are applicable to draft DASR as promulgated in NPA 2/2016 and can be viewed using the following link to the provisional DASR electronic manual from 30 Sep 16:

<http://www.defence.gov.au/DASP/Docs/Manuals/8000-011/DASRWeb/index.htm>

DASR 21

17. Addition of Appendix I – Categories of Flight Tests:

Appendix I

Categories of Flight Tests

A. General

This Appendix establishes the approval arrangements for Military Permits to Fly (MPTF) associated with flight tests according to category.

B. Categories of Flight Tests

1. Category One (1)

(a) Initial flight(s) of a new type of aircraft or of an aircraft of which flight or handling characteristics may have been significantly modified.

(b) Flights during which it can be envisaged to potentially encounter flight characteristics significantly different from those already known.

(c) Flights to investigate novel or unusual aircraft design features or techniques.

(d) Flights to determine or expand the flight envelope.

(e) Flights to determine the regulatory performances, flight characteristics and handling qualities when flight envelope limits are approached.

(f) Flight test training for Category 1 flight tests.

2. Category Two (2)

(a) Flights not classified as Category 1 on an aircraft whose type is not yet certified.

(b) Flights not classified Category 1 on an aircraft of an already certified type, after embodiment of a not yet approved modification and which:

(i) require an assessment of the general behaviour of the aircraft;

(ii) require an assessment of basic crew procedures, when a new or modified system is operating or is needed; or

(iii) are required to intentionally fly outside of the limitations of the currently approved operational envelope, but within the investigated flight envelope.

(c) Flight test training for Category 2 flight tests.

NOTE

Reference to 'basic' crew procedures refers to *fundamental* crew procedures for operating the aircraft, as opposed to *simple/benign/low-risk* crew procedures.

3. Category Three (3)

Flights performed for the issuance of statement of conformity for a new-built aircraft which do not require flying outside of the limitations of the type certificate or the aircraft flight manual.

4. Category Four (4)

Flights not classified as Category 1 or 2 on an aircraft of an already certified type, in case of an embodiment of a not yet approved design change (eg. trial modification).

C. Competence and experience of pilots and flight test engineers

Pilots and flight test engineers shall have competencies and experience as specified by the Authority (refer DASR FT.05.D).

18. Amendment of 21.A.143(a)(13) (AUS):

If flight tests are to be conducted, a flight test operations manual defining the organisation's policies and procedures in relation to flight test.

19. Amendment of AMC 21.A.143(a)(13) (AUS):

a. a description of the organisation's processes for flight test, including the flight test organisation involvement into the Military Permit to Fly issuance process (refer Subpart P);

20. Amendment of GM 21.A.163(e) (AUS):

The privilege described by this regulation will generally be granted only for Category 3 flight test activities (refer Appendix 1 to DASR 21).

21. Amendment of AMC 21.A.243(a)(1) (AUS):

a. a description of the organisation's processes for flight test, including the flight test organisation involvement into the Military Permit to Fly issuance process (refer Subpart P);

22. Amendment of GM 21.A.263(c)(7) (AUS):

The privilege described by this regulation will generally be granted only for Category 4 flight test activities (refer Appendix 1 to DASR 21).

23. New GM 21.A.711(a) (AUS):

Refer Appendix 1 to DASR 21. Approval of Military Permits to Fly is dependent on their category, as follows:

- a. Approval of Category 1 and 2 Military Permits to Fly is delegated to a Delegate of the Safety Authority (DoSA) – flight test.
- b. A Category 3 Military Permit to Fly may be approved by the Authority or an MPOA holder with an appropriate privilege (refer GM 21.A.163(e) (AUS)).
- c. A Category 4 Military Permit to Fly may be approved by the Authority or an MDOA holder with an appropriate privilege (refer GM 21.A.263(c)(7) (AUS)).

24. New GM 21.A.711(b) (AUS):

As per AMC 21.A.263(c)(7) (AUS), any privilege granted to MDOA holders will be restricted to approval of a Category 4 flight test (refer Appendix 1 to DASR 21).

25. New GM 21.A.711(c) (AUS):

As per AMC 21.A.163(e) (AUS), any privilege granted to MPOA holders will be restricted to approval of a Category 3 flight test (refer Appendix 1 to DASR 21).

DASR FT (complete revision)

FT.05.A. A MAO conducting flight test activities shall only conduct a flight test activity of category 1 to 4 as defined in DASR 21 Subpart P if an appropriate privilege has been granted by the Authority in the MAOC OpSpec.

GM to FT.05.A

Purpose. The purpose of this regulation is to ensure that a MAO only undertakes flight test it is capable of safely conducting.

Flight test is a subset of Defence Test and Evaluation activities that encompass a broad scope, from very simple to immensely complex, across the entire lifecycle of a capability. Not all flight test activities require regulation under DASR.

Flight test of categories 1 to 4, as defined and introduced by the European Aviation Safety Authority (EASA) in June 2015, address a scope of flight test activity that involves, to varying extents, the operation of an aircraft other than within its currently established type certification basis. A MAO requires a specific privilege to be able to conduct flight test activities of this nature.

Unless limited by direction or instruction from higher Command, a MAO may conduct flight test activities outside of category 1 to 4 without any specific privilege or approval from the Authority; noting that statutory WH&S obligations remain for all risks to be eliminated or minimised so far as reasonably practicable during flight test activities. The use of flight test conditions and restrictions, competent staff and appropriate test plans, schedules and procedures are common risk management controls for flight test activities.

FT.05.B. Flight test activity meeting the criteria of category 1 to 4 as defined in DASR 21 Subpart P must be conducted under the authority of a Military Permit to Fly (MPTF).

GM to FT.05.B

Purpose. The purpose of this regulation is to ensure that flight test is conducted under appropriate airworthiness controls.

Flight test is a subset of Defence Test and Evaluation activities that encompass a broad scope, from very simple to immensely complex. Not all flight test activities require regulation under DASR.

Flight test of categories 1 to 4, as defined and introduced by the European Aviation Safety Authority (EASA) in June 2015, address a scope of flight test activity that involves, to varying extents, the operation of an aircraft other than within its currently established type certification basis. An MPTF is the airworthiness instrument that authorises the operation of an aircraft in some manner that is outside the scope of that covered by the applicable Military Type Certificate (MTC) or Military Restricted Type Certificate (MRTC).

AMC to FT.05.B

As per DASR 21 Subpart P, a MPTF may be issued by:

- a. For all categories, The Authority,
- b. For all categories, an appropriate Delegate of the Safety Authority
- c. For category 3, an appropriately privileged Military Production Organisation Approval (MPOA) holder (refer DASR 21.A.163(e)), or
- d. For category 4, an appropriately privileged Military Design Organisation Approval (MDOA) holder (refer DASR 21.A.263(c)(6) and (7)).

MPTF for flight test must be issued using DASR Form 18a, 18b, 20a and/or 20b (as applicable) available on the DASA web site; however should include:

- a. flight test category.
- b. flight test scope.
- c. identification of a suitable, qualified organisation to conduct the test.
- d. reference to the design acceptable certification, if applicable.
- e. any residual airworthiness risk.

Flight test should be conducted in accordance with a flight test plan that includes:

- a. Test scope and objectives.
- b. Location of flight test activity.
- c. Pre-cursor airworthiness instruments or clearances required prior to testing.
- d. Required qualification, training and experience of the flight test personnel.
- e. Flight test procedures to be conducted.
- f. Data collection requirements.
- g. Configuration and environmental limitations imposed on the flight test.
- h. Operational limitations for each test configuration.
- i. Operations, maintenance and support arrangements.
- j. An aircraft stores clearance or aerial delivery clearance, if required.
- k. Results of previous tests, if applicable.
- l. SAR requirements.
- m. Reference to documented risk assessment and treatment, including any residual risk posed by the flight test.

FT.05.C. The MAO must seek advice from the Authority if there is any doubt with respect to the category of flight test.

GM to FT.05.C

Purpose. The purpose of this regulation is to ensure that flight test is correctly categorised and appropriate safety controls are applied for the complexity and risks of the test.

In the Defence context, a change to aircraft Role or Environment that has an appreciable effect on aircrew training curriculum, competency management, cockpit workload, human machine interface, flight authorisation, or other factors which affect safe flight operation is considered a substantial change to aircraft operation. This might include:

- a. introduction of a new role or alteration to an existing role.
- b. alteration to the permitted operating environment.
- c. alteration to the interoperability with other aircraft / ships.
- d. new and unique flight crew training requirements.

While an MAO may classify role and environment changes as substantial or non-substantial for the purpose of assessing risk and appointing responsible managers, care must be exercised in deciding the category of flight test to be conducted, and the associated controls required to manage the flight test activity. The 'substantiality' judgement does not correlate directly to the four categories of flight test under DASR and, depending on the specifics of the situation, a substantial change to aircraft operation may require:

- a. Category 2 flight test, with MPTF approved by the Authority,
- b. Category 4 flight test, with MPTF approved by a privileged MDOA, or
- c. Flight test that falls outside category 1 to 4, under the authority of the MAO.

Additional guidance shall be provided with formal release of DASR in Jan 17.

AMC to FT.05.C

MAOs should consult an appropriate delegate of the Safety Authority as follows:

- a. Director Test and Evaluation, Air Warfare Centre (AWC) (For Air Force and Army aircraft), or
- b. Officer in Charge Aircraft Maintenance and Flight Trials Unit (AMAFTU) for Navy aircraft).

FT.05.D. The MAO must demonstrate that it has the personnel, processes and data to safely conduct flight test to the satisfaction of the Authority and within the scope of privileges for flight test as listed in the MAOC OpSpec.

GM to FT.05.D

Purpose. The purpose of this regulation is to ensure the MAO has suitable personnel, processes and data to undertake flight test.

A delegate of the Safety Authority for flight test will act as subject matter expert to assess the MAO capability to conduct flight test and will establish minimum standards/ qualifications required.

Delegates of the Safety Authority for flight test include:

- a. Air Warfare Centre, Director Test & Evaluation (Army and Air Force

- b. OIC Aircraft Maintenance and Flight Trials Unit (AMAFTU) (Navy).

AMC to FT.05.D

A delegate of the Safety Authority for flight test should maintain and publish OIP specifying the qualifications required by personnel to conduct flight test category 1 to 4.

The MAO must ensure that personnel within the MAO conducting flight test hold the applicable qualifications as specified by the delegate of the Safety Authority for flight test.

FT.05.E. The MAO must provide the Authority with appropriate data and access to its organisation, when required.

GM to FT.05.E

Purpose. The purpose of this regulation is to ensure that flight test activity is subject to appropriate oversight.

The delegate of the Safety Authority for flight test will assess the MAO for its ability to safely conduct flight test, and provide ongoing oversight of its ability. To facilitate this assessment and oversight, the MAO must provide the delegate with all requested data and appropriate access to its organisation.

NPA 05/2016 Response Sheet

DASR Flight Test Regulations

Please return this response sheet by 28 Oct 16, via email attachment to DGTA-ADF.DASR-NPA@defence.gov.au.

Please indicate your acceptance or otherwise of this proposal by ticking the appropriate box below. Additional comments, suggested amendments or alternative action are welcome and may be provided on this response sheet or by separate correspondence.

- The proposal is **acceptable without change**.
- The proposal is **acceptable but would be improved if the following changes were made**:
- The proposal is **not acceptable but would be acceptable if the following changes were made**:

LSN	NPA Reference: (i.e Regulation number, NPA paragraph etc)	Comment or suggested change	Explanation
1			
2			
3			
4			
5			

RESOURCE IMPLICATIONS

Please provide specific comment on any significant resource implications that this proposal may have for your organisation, for both its implementation and ongoing compliance. Your comments should address both financial and human resource considerations.

Resource implications – Proposal implementation	
Resource implications – Proposal sustainment	

RESPONDENT DETAILS

Your name:	
Submission date:	
Your organisation:	
Email address:	
Postal address:	
Phone:	
Whose views are represented in your response? i.e. Is your response the authoritative response from your organisation?	Responding on behalf of : Individual [<input type="checkbox"/>] ADF AEO/AMO [<input type="checkbox"/>] Commercial AEO/AMO [<input type="checkbox"/>] Operational HQ (WG/FEG/Command) [<input type="checkbox"/>] Defence Regulatory, Technical or Logistics policy agency [<input type="checkbox"/>] Other commercial entity [<input type="checkbox"/>], Other [<input type="checkbox"/>] Please describe:-